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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No. : 10/718,086 Confirmation No. 9418
Applicant : Reade Clemens
Filed : November 19, 2003
TC/A.U. : 3724
Examiner : Phong H. Nguyen

Docket No. : 085.10546A(01-465A)
Customer No. : 52237

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

APPEAL BRIEF

Dear Sir:

This is an appeal to the Board of Patent Appeals and Interferences from the final rejection of claims 1 - 14, dated February 23, 2006, made by the Primary Examiner in Tech Center Art Unit 3724.

REAL PARTY IN INTEREST

The real party in interest is United Technologies Corporation of Hartford, Connecticut.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, Appellants' legal representative, or assignee which will directly affect or be directly affected by or

have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1 - 14 are pending in the application. All claims stand finally rejected and are on appeal.

A true copy of the claims on appeal are attached hereto in Appendix A.

STATUS OF AMENDMENTS

No amendment was filed after final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a diamond tipped indenting tool which is used to mark the surface of metal parts. See paragraph 0002 on page 1 of the specification. The indenting tool (10) (see FIG. 1) comprises a shank (12) having a tip end (14) and a diamond (16) affixed to the tip end by a braze material (18). The diamond forms the point of the tool and is mounted to the tip end within 8 degrees of a <17, 12, 24> direction. See page 2, paragraph 0014 and page 3, paragraph 0019 of the specification; also see FIG. 3.

As set forth in claim 2, the shank (12) is formed from at least one of a hardened tool steel, stainless steel, and a cemented carbide. See page 2, paragraph 0015 of the specification.

As set forth in claim 3, the tool has a head (20) formed adjacent a second end of the shank. See FIG. 1 and page 2, paragraph 0015 of the specification.

As set forth in claim 4, the head is wider than the shank. See FIG. 1 and page 2, paragraph 0015 of the specification.

As set forth in claim 5, the diamond is a single crystal diamond. See page 2, paragraph 0017 of the specification.

As set forth in claim 6, the diamond is a single crystal diamond nearly free of defects. See page 2, paragraph 0017 of the specification.

As set forth in claim 7, the diamond comprises a synthetic single crystal diamond. See page 3, paragraph 0021 of the specification.

As set forth in claim 8, the diamond in a final ground state has a length greater than an indentation depth to be imparted to a part to be marked. See page 3, paragraph 0018 of the specification.

As set forth in claim 9, the diamond has a 90 degree included angle conical point. See FIG. 2 and page 3, paragraph 0020 of the specification.

As set forth in claim 10, the diamond has a 120 degree included angle conical point. See FIG. 2 and page 3, paragraph 0020 of the specification.

As set forth in claim 11, the braze material comprises a brazing alloy which wets both the diamond and the material forming the shank. See page 3, paragraph 0019 of the specification.

As set forth in claim 12, the tip end of the shank is tapered. See FIG. 1 and see page 2, paragraph 0014 of the specification.

Independent claim 13 relates to an indenting tool (10) comprising a shank (12) having an end (14) and a diamond (16) secured to the end in a wear resistant orientation. The wear resistant orientation is within 8 degrees of a <17, 12, 24> direction. See FIGS. 1 and 3 of the drawings; also see page 2, paragraph 0014 and page 3, paragraph 0019 of the specification.

Independent claim 14 relates to a method of making an indenting tool (10). The method comprises the steps of providing a shank (12) having an end (14), providing a diamond (16), positioning the diamond in a wear resistant

orientation and securing the diamond to the end. The positioning step comprises positioning the diamond in a wear resistant orientation of within 8 degrees of a <17, 12, 24> direction. See page 3, paragraph 0019 of the specification.

GROUND'S OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are as follows:

(1) The rejection of claims 1 - 14 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement;

(2) The rejection of 1 - 6 and 8 - 14 under 35 U.S.C. 102() as being anticipated by U.S. Patent No. 6,051,079 to Anderson et al.; and

(3) The rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Anderson et al.

ARGUMENT

*(A) Claims 1 - 14 Comply With
The Enablement Requirement
Of 35 U.S.C. 112, 1st Paragraph*

Claims 1 - 14 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement

requirement of 35 U.S.C. 112, 1st paragraph. The Examiner contends that regarding independent claims 1, 13, and 14, it is unclear whether Appellant claims atomic arrangement of the atoms in the diamond tip 16 or the angle of the diamond tip 16 with respect to the shank axis 24 or the angle of the outer surface of the diamond tip with respect to the diamond tip's axis or the diamond tip's base. The Examiner contends that there is insufficient information as to the specific intrinsic crystallographic direction and the angle to what it is. That is, it is not clear what the <17, 12, 24> direction represents. The Examiner further states that "it is not clear why mounting of any diamond tip to an indenting tool would not inherently meet the limitation of the direction of the diamond tip, since the Applicant's diamond tip is very similar to other diamond tips which both align with the axis of their shank and both have conical shape."

With regard to the latter statement, this is not a basis for making a rejection under 35 U.S.C. 112, first paragraph. It may form a basis for a prior art rejection, but it certainly does not form the basis for a non-enablement rejection. The fact that Appellant's diamond tip is similar to others goes to prior art, not to enablement.

With regard to the enablement rejection, the Examiner has not made out a *prima facie* case of non-enablement since there is no statement as to why one of ordinary skill in the art having the teachings contained in the specification and drawings could not make and use the claimed invention. As stated in *In re Armbruster*, 185 USPQ 152, 153 (CCPA 1975), quoting from *In re Marzocchi*, 169 USPQ 367, 369-70 (CCPA 1971), "it is incumbent upon the Patent Office, whenever a rejection on this basis [lack of enablement] is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement." The Examiner has not provided any evidence or any reasoning why one of ordinary skill in the art having the instant disclosure before him could not make or use the claimed invention. The mere fact that the Examiner is having difficulty understanding the claimed subject matter or has "doubts" is not a basis for a lack of enablement rejection. The standard is one of ordinary skill in the art and the Examiner is not one of ordinary skill in the art. In Appellant's opinion, the specification contains sufficient guidance so that one of ordinary skill in the art could

make and use the claimed invention without undue experimentation.

In the final rejection, the Examiner raised an objection to the specification. Appellant offered the following response to the objection which is germane to the instant discussion:

"In the office action mailed February 23, 2006, the Examiner objected to the specification on the grounds that the specification does not clearly explain the diamond mounting direction in paragraph [0019]. The Examiner contends that the specification does not describe how the locations of the coordinates are defined so that one of ordinary skill in the art can make and use same. That is, whether the coordinates are defined relative to the shank axis or the diamond tip axis. Once again, Applicant points out that this contention is without merit. One of ordinary skill in the art reading the specification, in particular paragraph [0019] and looking at FIGS. 2 and 3 would understand that the location of the coordinates is defined relative to the shank axis. One of ordinary skill in the art would understand that this is the case because of the depiction of the axis 24 in FIG. 2. One of ordinary skill in the art would also understand that the crystallographic direction $\langle 17, 12, 24 \rangle$ is the direction in which the diamond is to be mounted, which direction is aligned with the shank axis. One of ordinary skill in the art would readily understand all of this from paragraph [0019] and from FIG. 3. In fact, in Applicant's opinion, all one of ordinary skill in the art needs is FIG. 3. The questions set forth by the Examiner in the first full paragraph on page 6 of the office action have nothing to do with what has been disclosed in the present application and show that the problem is with the Examiner and not with the disclosure. With respect to the Examiner's comments in the second full paragraph on page 6 of the office action, the coordinates of the direction are clearly defined in the specification. See FIG. 3 and see paragraph [0019]. Nothing more is needed.

Even if some experimentation was needed, and Appellant believes none is needed, such experimentation would be permissible. See *Ex parte Jackson*, 217 USPQ 804, 807 (BPAI 1982); also see *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 USPQ 81, 94 (Fed. Cir. 1986). Where a specification such as the instant one provides guidance in selecting parameters that would yield the claimed result as well as a lot of other details, it is fair to conclude that the experimentation required to make a particular embodiment is not "undue". See *In re Colianni*, 195 USPQ 150, 153 (CCPA 1977); also see *In re Wands*, 8 USPQ2d 1400, 1406 (Fed. Cir. 1988). For these reasons, the rejection under 35 U.S.C. 112, first paragraph should be reversed.

(B) *Claims 1 - 6 and 8 - 14*

Are Not Anticipated By Anderson et al.

With regard to the rejection of claims 1 - 6, and 8 - 14 on anticipation grounds over U.S. Patent No. 6,051,079 to Anderson et al., it is well settled that in order for a reference to anticipate a claim, it must contain all the features called for in the claim. Anderson et al. does not teach or suggest a diamond being mounted to the tip and within 8 degrees of a <17, 12, 24> direction as claimed in independent claims 1, 13, and 14. Anderson et al. is

silent on the crystallographic orientation of the diamond and for good reason. Anderson et al.'s tool does not use a diamond mounted to the tip of a shank. Anderson et al. merely coats a carbide tip with a diamond coating. See column 3, lines 29 - 54 of Anderson et al. Certainly, Anderson et al. does not recognize that mounting a diamond to a tip within 8 degrees of a $\langle 17, 12, 24 \rangle$ direction is beneficial in terms of it being a wear resistant orientation. Again, Anderson et al. would have no interest in this because Anderson et al. does not use a single diamond as the tip of the tool.

It should also be noted that Anderson et al. does not teach or suggest affixing a diamond to the tip end by a braze material. While Anderson et al. may braze the carbide tip to the end of a tool, Anderson et al. does not teach or suggest brazing a diamond to the carbide tip.

Claim 13 is allowable because Anderson et al. does not teach or suggest securing a diamond to an end of a shank.

Claim 14 is allowable because Anderson et al. does not teach the steps of positioning a diamond in the claimed wear resistant orientation and securing the diamond to the end of a shank.

With regard to the Examiner's comments in the final rejection, it is submitted that what the Examiner considers

a reference to show is not relevant to the issue of anticipation. What is significant is what the reference discloses to one of ordinary skill in the art. Anderson simply does not disclose the invention set forth in independent claims 1, 13, and 14 for the reasons set forth above.

Claims 2 - 6 and 8 - 12 are allowable for the same reasons as their parent claim(s) as well as on their own accord. For example, Anderson et al. does not teach or suggest forming a shank to which a diamond is attached from at least one of a hardened tool steel, stainless steel, and a cemented carbide (claim 2); a head formed adjacent a second end of the shank (claim 3); a head which is wider than the shank (claim 4); the use of a single crystal diamond (claims 5 and 6); a diamond which in a final ground state has a length greater than an indentation depth to be imparted to a part to be marked (claim 8); a diamond having a 90 degree included angle conical point (claim 9); a diamond having a 120 degree included angle conical point (claim 10); a brazing alloy which wets both the diamond and the material forming the shank (claim 11); and a shank with a tapered tip end (claim 12) to which a diamond is attached.

*(C) Claim 7 Is Not Obvious Over
Anderson et al.*

With regard to the rejection of claim 7 on obviousness grounds, claim 7 is allowable for the same reason as claim 1 as well as its own accord. Further, the mere fact that something is known in the art is not a basis for concluding something is obvious. The Examiner provides no secondary reference that teaches or suggests the use of a synthetic single crystal diamond. Still further, the Examiner has not provided any statement as to why one of ordinary skill in the art would be motivated to use a synthetic single crystal diamond. Again, in Anderson et al., there is only a diamond coating applied to a carbide tip. There is no reason why one of ordinary skill in the art would have any interest in a synthetic single crystal diamond. Thus, the rejection based on obviousness is fatally flawed and should be reversed.

CONCLUSION

For the foregoing reasons, the Board is hereby requested to reverse the rejections of record and remand the instant application back to the Primary Examiner for allowance.

APPEAL BRIEF FEE

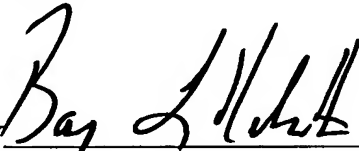
The Director is hereby authorized to charge the Appeal Brief Fee of \$500.00 to Deposit Account No. 21-0279.

Should the Commissioner determine that an additional fee is due, he is hereby authorized to charge said additional fee to said Deposit Account.

Respectfully submitted,

IN TRIPLICATE

Reade Clemens

By 
Barry L. Kelmachter
BACHMAN & LaPOINTE, P.C.
Reg. No. 29,999
Attorney for Applicants

Telephone: (203) 777-6628 ext. 112
Telefax: (203) 865-0297
Email: docket@bachlap.com

Date: July 24, 2006

I, Karen M. Gill, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on July 24, 2006.



CLAIMS ON APPEAL - APPENDIX A

1. An indenting tool comprising:

a shank having a tip end;

a diamond affixed to said tip end by a braze material,
said diamond forming a point of the tool; and

said diamond being mounted to said tip end within 8
degrees of a <17,12,24> direction.

2. An indenting tool according to claim 1, wherein said
shank is formed from at least one of a hardened tool steel,
stainless steel, and a cemented carbide.

3. An indenting tool according to claim 1, further
comprising a head formed adjacent a second end of said
shank.

4. An indenting tool according to claim 3, wherein said
head is wider than said shank.

5. An indenting tool according to claim 1, wherein said
diamond is a single crystal diamond.

6. An indenting tool according to claim 1, wherein said
diamond is a single crystal diamond nearly free of defects.

7. An indenting tool according to claim 1, wherein said
diamond comprises a synthetic single crystal diamond.

8. An indenting tool according to claim 1, wherein said diamond in a final ground state has a length greater than an indentation depth to be imparted to a part to be marked.

9. An indenting tool according to claim 1, wherein said diamond has a 90 degree included angle conical point.

10. An indenting tool according to claim 1, wherein said diamond has a 120 degree included angle conical point.

11. An indenting tool according to claim 1, wherein said braze material comprises a brazing alloy which wets both said diamond and the material forming said shank.

12. An indented tool according to claim 1, wherein said tip end of said shank is tapered.

13. An indenting tool comprising:

a shank having an end;

a diamond secured to said end in a wear resistant orientation; and

said wear resistant orientation being within 8 degrees of a <17, 12, 24> direction.

14. A method of making an indenting tool, comprising the steps of:

providing a shank having an end;

providing a diamond;

positioning said diamond in a wear resistant orientation;

securing said diamond to said end; and

said positioning step comprising positioning said diamond in a wear resistant orientation of within 8 degrees of a <17, 12, 24> direction.

EVIDENCE - APPENDIX B

NOT APPLICABLE

RELATED PROCEEDINGS - APPENDIX C

NOT APPLICABLE